

## CLAIMS

**1) IMPROVEMENT TO THE METALLIC STRUCTURE FOR  
MANUFACTURING ELECTRICAL FRAMES / CABINETS**, generically  
recommended for (1), indoor or outdoor type although in both cases it is  
5 presented in the form of a metallic box with side enclosures (2), including one or  
more tilting doors (3) with a lock (4); said enclosures include the doors, normally  
manufactured from substantially thin metallic plates and in this manner all  
electrical panels have an internal metallic cross sections structure (5), with the  
means for supporting the parts making up the external walls from folded sheets,  
10 as well as constituting the means for supporting and mounting the doors and its  
respective hinges, as well as other accessories, such as: the upper (6) and lower  
enclosure with a base (7) and other components, being that even with this  
selfsame structure although on the inside also has a configuration for the  
necessary mounts for distributing and mounting the different electrical and  
15 electronic components and devices **characterised** by the fact of the first  
constructed version, the said structure (5) is presented semi-assembled, where  
four of its uprights or four of its cross sections (P1) are completely free whilst all  
the other cross sections are rigidly integrated into two equal rectangular frames  
(8) which form the two opposite sides of the said structure (5) and therefore at  
20 the corner point of the junction of each rectangular frame (8) there is a  
complementary device (9) cooperating for the interlinking at 90° between two  
adjacent cross sections (P2) and (P3) of each frame (8), as also this selfsame  
device presents the means so that the extremities of the other cross sections (P1)  
may be coupled between the corners of the rectangular frames (8), thus forming  
25 the structure (5).

**2) IMPROVEMENT TO THE METALLIC STRUCTURE FOR**

**MANUFACTURING ELECTRICAL PANELS / CABINETS**, according to claim 1, characterised by the fact of complementary device (9) is made up of a square transversal section dowel (10), is sized so that its lower end can penetrate in a tight fitting manner inside the tubular part (T) of the cross sections (P2), whilst

5 its upper extremity, besides including a vertically threaded hole (F), usually, remains sufficiently exposed according to a height compatible to the adjacent cross section (P3), in such a manner that the said point and the two cross sections may be joined by welding (11), thus forming that substantially rigid rectangular frame (8) and at the same time, the four corners of each frame (8) also have the

10 configuration for the means of coupling to the cross sections (P1) which in the same manner receive the other dowels (12), having one end fitted into the tubular part (T) of the cross section (P1), where the said end is fastened by screws in the side, whilst the other end presents a longitudinal threaded hole (13) and a self locking fitting from the top (14), in cooperation to be to be inserted into the other

15 (15) existing on the side face of the other dowel (10), where there is a through hole (16), aligned with the said fittings (14-15) and with a threaded hole (13) so that the two dowels can be joined with a screw (17).

### **3) IMPROVEMENT TO THE METALLIC STRUCTURE FOR**

**MANUFACTURING ELECTRICAL PANELS / CABINETS**, according to claim 1,

20 characterized by the fact that in another construction variation, the pre-fitting between two dowels is carried out by an off center pin (18) which on the one end penetrates and is attached to a suitable hole existing on the top of the dowel (12'), whilst the other end penetrates equally in another existing guide hole in the side of the dowel (10'), in a way characterising a pre-adjustment between the

25 two parts before inserting the screw (17'), which penetrates into a threaded hole (13') it is a smooth hole (16') existing in the dowels (12') and (10'),

respectively.

**4) IMPROVEMENT TO THE METALLIC STRUCTURE FOR**

**MANUFACTURING ELECTRICAL PANELS / CABINETS**, according to claim 1, characterized by the fact that in another construction variation, a dowel will be  
5 fitted (19) geometrically equal to the previous ones but only with a threaded hole (F), as this dowel also (19) presents a compatible dimensioning so that its lower end may penetrate the tubular part (T) of the cross section (P2), whilst its upper point remains positioned between the ends of the other two cross sections (P1-  
10 P3), where the said dowel configures a joining knot between the three cross sections, being that this join is made by welds (11') applied to all the edges of the said cross sections, including those that are in contact with the referred to  
dowel (19).

**5) IMPROVEMENT TO THE METALLIC STRUCTURE FOR**

**MANUFACTURING ELECTRICAL PANELS / CABINETS**, according to claim 1,  
15 this is an integral part of the set for at least one pair of internal crossbeams (20), folded from sheets, presenting a transversal section ordinarily in "U", its ends have wings (21) to be fastened down with screws on the corresponding vertical cross sections (P2) and for this end the said cross sections, have rows of different openings (22); said crossbeams (20) are positioned along any point of the height  
20 of the cross sections (P2), logically on the same plane, that is, the one side is aligned with the opposite side and serves a complementary locking of the structure (5) as well as serving to mount the components to be installed inside the cabinet, nevertheless, these also confer a considerable increase to the unit's structural effect; **characterised** by the fact that at the two ends of the crossbeams  
25 (20) two sets of anchoring grips will be provided, one set is fitted to one of the wings (21) or more precisely to its vertical edge, where the grips are presented in

the form of two "L" shaped teeth (23) designed perpendicularly inwards, whilst the opposite side of the grips are presented in the form of two small shafts (24), these and the grips (23) penetrate the corresponding openings (22).

**6) IMPROVEMENT TO THE METALLIC STRUCTURE FOR**

- 5 **MANUFACTURING ELECTRICAL PANELS / CABINETS**, according to claim 1, characterised by the fact that at least one crossbeam (20) is positioned vertically between the other two vertical crossbeams (20), as all of them are equally equipped with different and cooperating openings to fit the grips (23) and the ends (24).